

Math Virtual Learning

College Prep Algebra

April 16, 2020

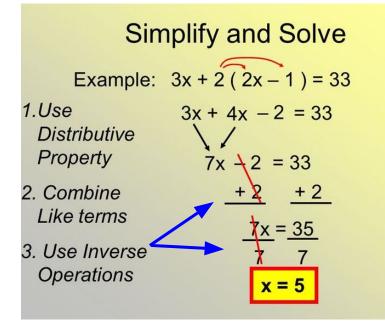


College Prep Algebra Lesson: April 16, 2020

Objective/Learning Target: How to use logarithms to solve exponential equations

Let's get started:

Have you noticed when solving algebraic equations you use inverses to "undo" the work until you are left with the solution?



Lesson:

The inverse of an exponential, which means repeated multiplication, needs to be repeated division, which is what the word logarithm means!

So to solve an equation like

$$3^{x+1} = 5$$

You want to "divide repeatedly the 5 by 3" to determine the power.

$$x + 1 = \log_3 5$$

Watch this video that shows how to solve with logarithms. <u>VIDEO</u>

The video uses an online scientific calculator. Here is the link for the calculator <u>Scientific Calculator</u>

See if you can solve the problem from the previous slide.

Go to the next slide to see the result!

$$3^{x+1} = 5$$

 $x + 1 = \log_3 5$

Lesson: Scientific Calculator



$3^{x+1} = 5$ $x + 1 = \log_3 5$ -1-1 $x = \left(\frac{\log 5}{\log 3}\right) - 1$

 $x \approx 0.465$

Practice:

To practice solving exponential equations with logarithms, use the worksheet link and the scientific calculator link below.

Solving Exponential Equations with Logs AND Answer Key **Scientific Calculator**

Additional Practice

Khan Academy Online Practice Problems

IXL free online practice: YOU NEED THE CALCULATOR